

# NHE-5 (C-20): sc-16109

## BACKGROUND

Na<sup>+</sup>/H<sup>+</sup> exchangers-1-6 (Na<sup>+</sup>/H<sup>+</sup> antiporters, NHE-1-6) are integral membrane proteins that are expressed in most mammalian tissues, where they regulate intracellular pH and cell volume. NHEs mediate the secondary active extrusion of hydrogen (H<sup>+</sup>) ions out of cells in exchange for extracellular sodium (Na<sup>+</sup>). Excluding NHE-1, which is ubiquitously expressed, NHE isoforms 2-6 have distinct tissue- and cell type-dependent expression and inhibitory characteristics by amiloride analogs. Human NHE-5 transcript (solute carrier family 9, isoform-5, SLC9A5) is an 896 amino acid protein that is expressed in brain, testis, spleen and skeletal muscle.

## REFERENCES

1. Fliegel, L., et al. 1993. Cloning and analysis of the human myocardial Na<sup>+</sup>/H<sup>+</sup> exchanger. *Mol. Cell. Biochem.* 125: 137-143.
2. Biemesderfer, D., et al. 1993. NHE-3: a Na<sup>+</sup>/H<sup>+</sup> exchanger isoform of renal brush border. *Am. J. Physiol.* 265: 736-742.
3. Noel, J., et al. 1995. Hormonal regulation, pharmacology, and membrane sorting of vertebrate Na<sup>+</sup>/H<sup>+</sup> exchanger isoforms. *Am. J. Physiol.* 268: 283-296.
4. Klanke, C.A., et al. 1995. Molecular cloning and physical and genetic mapping of a novel human Na<sup>+</sup>/H<sup>+</sup> exchanger (NHE-5/SLC9A5) to chromosome 16q22.1. *Genomics* 25: 615-622.
5. Cox, G.A., et al. 1997. Sodium/hydrogen exchanger gene defect in slow-wave epilepsy mutant mice. *Cell* 91: 139-148.
6. Baird, N.R., et al. 1999. Molecular cloning, genomic organization, and functional expression of Na<sup>+</sup>/H<sup>+</sup> exchanger isoform 5 (NHE-5) from human brain. *J. Biol. Chem.* 274: 4377-4382.

## CHROMOSOMAL LOCATION

Genetic locus: SLC9A5 (human) mapping to 16q22.1; Slc9a5 (mouse) mapping to 8 D3.

## SOURCE

NHE-5 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of NHE-5 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16109 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## APPLICATIONS

NHE-5 (C-20) is recommended for detection of NHE-5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

NHE-5 (C-20) is also recommended for detection of NHE-5 in additional species, including equine, canine, bovine and porcine.

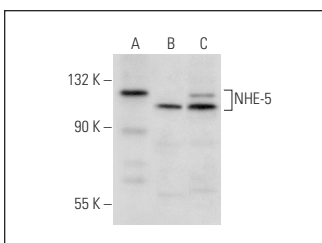
Suitable for use as control antibody for NHE-5 siRNA (h): sc-42656, NHE-5 siRNA (m): sc-42657, NHE-5 shRNA Plasmid (h): sc-42656-SH, NHE-5 shRNA Plasmid (m): sc-42657-SH, NHE-5 shRNA (h) Lentiviral Particles: sc-42656-V and NHE-5 shRNA (m) Lentiviral Particles: sc-42657-V.

Positive Controls: NCI-H292 whole cell lysate: sc-364179, Jurkat whole cell lysate: sc-2204 or Hep G2 cell lysate: sc-2227.

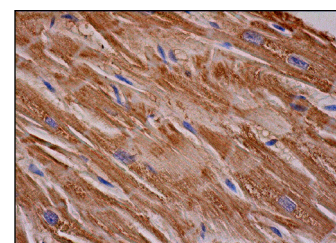
## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

## DATA



NHE-5 (C-20): sc-16109. Western blot analysis of NHE-5 expression in NCI-H292 (A), Jurkat (B) and Hep G2 (C) whole cell lysates.



NHE-5 (C-20): sc-16109. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.